Claims

[c1] *1* .A ballast circuit powered by an AC-to-DC converter in operative connection with an input power source, the AC-to-DC converter being configured to produce a DC voltage, the ballast circuit comprising:
a DC bus in operative connection with said AC-to-DC converter, configured to receive the DC voltage;
an inverter circuit configured in operative connection with the DC bus, configured to generate an asymmetric alternating current on a lamp input line; and
a gas discharge lamp in operative connection to the lamp input line to receive the asymmetric alternating current.

[c2] *2* .The ballast circuit according to claim *1* wherein the inverter circuit includes:
a switching network including bipolar junction transistor switches wherein the bipolar junction transistors are configured to have unequal on times.

[c3] *3* .The ballast circuit according to claim *2* wherein the bipolar junction transistor switches are configured to have unequal *hfe* values.

[c4] *4* .The ballast circuit according to claim *1* wherein the inverter circuit includes:
a switching network including MOSFET transistor switches wherein the MOSFETs are configured to have unequal on times.

[c5] *5* .The ballast circuit according to claim *4* further including:
back-to-back, series connected zener diodes bridging the gate and source terminals of the MOSFETs.

[c6] *6* .The ballast circuit according to claim *5* wherein the Zener diodes are configured with unequal voltage values.

[c7] *7* .The ballast circuit according to claim *1* further including:
a DC blocking capacitor configured to block DC current from the asymmetric alternating current.

[c8] *8* .A method of supplying asymmetric alternating current to a gas discharge lamp from a ballast, the method comprising:
converting an AC voltage from an input power source to produce a DC voltage on a DC

bus;

inverting said DC voltage to produce an asymmetric alternating current on a lamp input line; and

supplying a gas discharge lamp with the asymmetric alternating current in operative connection with said lamp input line.

[c9] *9* .The method according to claim *8* wherein said inverting is performed by a switching network including bipolar junction transistor switches wherein the bipolar junction transistors are configured to have unequal on times.

[c10] *10* .The method according to claim *9* wherein the bipolar junction transistor switches are configured to have unequal *hfe* values.

[c11] *11* .The method according to claim *8* wherein said inverting is performed by a switching network including MOSFET transistor switches wherein the MOSFETs are configured to have unequal on times.

[c12] *12* .The method according to claim *11* further including:

providing back-to-back, series connected zener diodes bridging the gate and source terminals of the MOSFETs.

[c13] *13* .The method according to claim *12* wherein the Zener diodes are configured with unequal voltage values.

[c14] *14* .The method according to claim *8* further including:

providing a DC blocking capacitor configured to block DC current from the asymmetric alternating current.

[c15] *15* .A ballast circuit powered by an AC-to-DC converter in operative connection with an input power source, the AC-to-DC converter being configured to produce a DC voltage, the ballast circuit comprising:

a DC bus in operative connection with said AC-to-DC converter, configured to receive the DC voltage;

a lamp input current generating circuit in operative connection with the DC bus, configured to generate an asymmetric alternating current on a lamp input line; and

a gas discharge lamp in operative connection to the lamp input line to receive the

asymmetric alternating current.

[c16] 16 .The ballast circuit according to claim 15 further including:

a DC blocking capacitor configured to block DC current from the asymmetric alternating current.